# BRIEFER COMMUNICATIONS.

## THE RELATION OF ABSTRACT TO CONCRETE SCIENCES.

So many new and interesting questions are injected into our discussion by Professor Giddings' note on "Sociology and the Abstract Sciences" in the March number of the ANNALS, that it is not easy to determine at just what points to prolong the controversy. After some consideration I have concluded to pass by, for the present, the older problems upon which I have already expressed my opinion and to turn at once to the most important of the new problems suggested. In this way the attention of the reader may be economized and the discussion itself guided into an even more fruitful channel than it has yet followed.

When I first saw Professor Giddings' plan for a double classification of the sciences, it pleased me very much. I thought that with its use many of the differences between the deductive and descriptive methods of studying the social sciences might be made plain; in cases where agreement is impossible we might, at least, understand one another and locate the source of the disagreement. But, since he has explained his plan more fully, I think that for the present, at least, it has added to the sources of confusion rather than helped to clear them up.

The new difficulty comes from the way in which Professor Giddings separates the abstract from the concrete sciences. He uses "abstract" and "hypothetical" as though they were convertible terms, and then uses "phenomenal" and "concrete" in a like manner. To my mind, the contrast between hypothetical and phenomenal is not the same as that between abstract and concrete. The first contrast implies simply that the ultimate units of certain sciences are not matters of experience, while in other sciences the ultimate units can be seen or felt. In an abstract science, however, the ultimate units may be matters of experience, but some of the qualities of these units are considered by themselves to the exclusion of other qualities. In a concrete science all the qualities of the unit are valued alike and are supposed to have some influence upon the effects which the activity of the unit produces. Or, to put the case in another way, an abstract science tries to determine effects through a knowledge of the causes which produce them. A concrete science reverses this process and tries to learn of causes through their effects.

A hypothetical science must be abstract, but an abstract science need not be hypothetical, in the sense in which "hypothetical" is the term opposed to "phenomenal." The term "hypothetical" has, however, a place in abstract sciences, because the conclusions derived from abstract reasoning are hypothetical. Some sciences, physics for example, have hypothetical premises; others, like economics, have hypothetical conclusions. If we use the term "hypothetical" to designate those sciences with hypothetical premises, the number and extent of such sciences are more limited than if the term is so used that all sciences with hypothetical conclusions were included under it.

Professor Giddings, if I understand him rightly, would place the law of gravitation in concrete physics, because gravity is a part of the phenomenal world and does not depend on such abstractions as atoms, centrodes, etc.; yet, no other law stands so fully as a model for abstract thinking. Abstract economics has been based on the thought that its reasoning should conform to the standard which this law has created. If the law of gravitation is a part of a concrete science, then all of pure economics is a concrete science. The law of utility is the most abstract part of economics, and yet utility is a phenomenon. It is a part of the concrete world, and not like atoms, a matter of hypothesis.

In an abstract science, certain phenomena are studied first, and then certain facts are predicated of other phenomena, of which no inductive study has been made. A study of utilities, for example, shows that they differ in intensity, and can, therefore, be arranged in a definite order. From a knowledge of these facts, certain conclusions can be drawn as to the value of the objects which afford these utilities. With a supply of five apples, the value of each apple cannot be greater or less than the utility of the fifth apple. We draw this conclusion about value, although it was not a part of the original investigation; it is studied in the end only to verify the deductions which were made of it from the study of the phenomena of utility. In a concrete science, however, all the facts of a given class are discovered, and then an attempt is made to so arrange them that they will give additional knowledge about themselves. No attempt is made to predicate facts about phenomena not under investigation, as would be done in abstract sciences. Sciences may, therefore, be classified according to the character of their premises, or according to the character of their conclusions. The first classification is of no value in the social sciences, because all their data belong to the phenomenal world.

Professor Giddings' classification is based primarily on the history of the development of the physical sciences and overlooks the different

character of the phenomena with which we have to do in the social and vital sciences. In the latter, a three-fold division of the sciences is better than a two-fold one. Besides the concrete and abstract sciences, we have a series of comparative sciences. In any field where the evolutionary processes have been at work for a long time, not only is there a large number of concrete types and forms to be studied, but also these types and forms must be arranged in a series; their general principles studied, and certain deductions drawn from the premises thus obtained. Natural history and botany are instances of sciences dealing with certain concrete forms; while biology is really a comparative study of the results of these earlier observations. In the same group of sciences as biology are comparative philology; comparative religion; ethics, in its usual sense; politics, when a study of comparative institutions; and political economy, as investigated by the historical school. The abstract social sciences lie back of this group of comparative sciences, and get their premises largely from physical geography, psychology, and biology, that is, from fields not strictly within the realm of social science.

If this three-fold classification is adopted, a concrete social science will have a more limited field than do the concrete physical sciences in a two-fold division. In any case, this difference in classification will help to show the cause of the differences of opinion between Professor Giddings and myself. I agree with Professor Small rather than with him as to what field sociology, as a concrete science, should occupy. The two fields, however, are so distinct that they should have different names.

Professor Giddings is constantly asserting that sociology is a concrete science, and yet in all his examples of sociological reasoning he has used the abstract method. If I am abstract in studying utility and making from this study predicates about economic facts, he is abstract when he studies imitation and draws thence conclusions about society. Imitation, in the sense in which he uses it, is as abstract as utility, and they must both be studied by the same method. He also assumes that if imitation came earlier than the thought of marginal utility, it proves that marginal utility depends upon social relations. He thus defines society as though its only characteristic was the phenomenon of imitation. If this be true, then the study of society is an abstract science. It would be what he calls ethics, and what I call the theory of social forces.

To me society is a concrete reality, and not an abstract concept. The social elements or forces, of which there are many, must blend into a concrete unit to make society possible. No one of these elements, like imitation, can be taken as an index of the presence of a society,

without having the study of society changed into a study of the forces which create society, and of the order in which they arise. I have not claimed that the phenomenon of marginal utility precedes all the social forces. Many of these forces appear in isolated forms long before a concrete society appears. I contend that the thought of marginal utility precedes the formation of concrete societies whose phenomena, according to Professor Giddings, form the subject-matter of the science of sociology.

I do not ask for a better proof of the fact that Professor Giddings confuses the problems of an abstract and those of a concrete science, than is given in his paper. While wishing to have sociology rank as a concrete science of a descriptive and historical character, he desires to define a society in terms of imitation only, so as to carry on a discussion about the relation of marginal utility to imitation. This, to my mind, violates the first principle of a concrete discussion. If he wants to show that the thought of marginal utility comes subsequently to the formation of concrete societies, he should prove his thesis by presenting historical and descriptive matter supporting his claim. To discuss imitation, identity of kind, sympathy, and similar abstract concepts, carries him into the abstract science he calls ethics, and away from all forms of concrete society. Both ethics and sociology are fields worthy of investigation; but they are different sciences and use different methods of research. Sociologists must be conscious when they pass from the one field to the other before they can do good work, or make their meaning clear to other students of social phenomena.

I do not think that the issue between Professor Giddings and myself depends upon whether or not "a consciously hostile conflict for food among creatures of a like kind, is antecedent to a consciousness of identity or likeness of kind and its accompanying phenomena of imitation." I have contended that marginal utility does not depend on imitation even though it comes later in time. I have made no point about the order of marginal utility and imitation; I have said merely that the thought of marginal utility precedes society and social relations, as I understand these terms. Professor Giddings brought up the question of the relation between marginal utility and imitation, by his assumption that the latter phenomenon was the index of the existence of a society among groups where such acts are common.

Nor does the issue between Professor Giddings and myself depend upon whether "imitation is older than conflict among creatures of the same kind." My point is that the instincts that lead to conflict are older than the social instincts. When I used language which implied that the original form of conflict was between the members of a society, I thought that Professor Giddings meant to iuclude the

phenomenon of hostile conflict among social phenomena. I supposed that the spider and the fly were to be regarded as members of a society because they have definite relations with one another, and influence each other's conduct. Afterward Professor Giddings denied that he meant to include such relations among social phenomena, and I agree with him in limiting social relations to those existing between beings of a kind. This limitation of the meaning of "association" and "society" excludes the phenomena of hostile contact between creatures of different kinds from social phenomena; but it does not diminish their importance nor weaken the proof of the fact that hostile contact comes earlier than friendly contact.

The growing intensity of initial utilities is, as I have shown, the outcome of this hostile conflict between creatures of different kinds. The one class becomes aggressive; the other becomes timid. There comes to each class a group of instincts corresponding to the needs of their situation. The aggressors seek to seize objects of desire and to destroy objects of pain. Anger, passion and other instincts, prompted by the growing intensity of utilities, spring out of these tendencies.

Among the victims of this aggression, a group of defensive instincts must develop. The instinct to flee from hostile objects comes first; but flight must be well directed, and to direct flight in the best direction the instinct of imitation arises. This instinct gives a better protection to an individual of this kind than he could acquire through his own invention. The necessity for flight is the cause of imitation. Like other social instincts it arises not among the victors but among the vanquished.

To my mind the presence of aggressive instincts is a better index of social relations than is the phenomenon of imitation. Mere imitation creates a group of runners. Each individual seeks to avoid a present danger by doing as others do. Aggressive or destructive instincts cause the individual to oppose the source of pain and to try to remove or destroy it. To acquire aggressive instincts, a being must have intense feelings of pleasure and pain, and by acting on the theory of initial utility be made conscious of the direct opposition of interests between himself and his opponent.

Aggressive instincts do not of themselves create social relations, but they must exist before a society is possible. They become social when they are directed against the environment of a group, and not against its members. No group of individuals is a society until they begin to react against their environment. It is their aggressive instincts alone that lead them to modify their environment so as to avoid its evils and to increase its utilities. A flock of blackbirds does not

in my opinion constitute a society. Such birds imitate one another only to the extent of flying together from the evils of winter. They do not reconstruct their environment by aggressive means as do the members of any true society.

If true societies grow up only among those beings who have aggressive instincts, it is a mere formal victory to show that beings who never develop into societies are imitative before other beings, who do ultimately form societies, have conflicts with each other. The real issue is whether or not the ancestors of social beings were hostile before they were social. I contend that an aggressive being will become hostile to one of his kind as soon as he is conscious of an opposition of interests. This opposition may be due to a lack of food or to a desire to gratify the sexual instinct. The vanquished in these contests become imitative, and are forced into poorer localities where they acquire other social instincts and finally create a society. Imitation thus follows conflict among creatures who become social although it may precede conflict among those creatures who never develop into a society.

I think that Professor Giddings misinterprets the facts he presents about amœbae and other low forms of life, and thus draws wrong conclusions about the origin of social feelings. Such a creature, as Professor Giddings says, learns by the contact of one part of his body with another to associate a certain touch with itself, and because of this feeling the one part does not try to absorb the other as it would foreign bodies fitted for food. When it touches another creature of the same kind, Professor Giddings assumes that it recognizes that it is in contact with another being of the same kind, and because of this fact refuses to absorb it. I think, however, that it mistakes this other creature for a part of itself and refuses to absorb it for the same reason that it refused to make food of one of its own parts. It is a case of mistaken identity due to a lack of development. The act is a part of an individual instinct to save itself from pain, and throws no light on the order in which social and individual feelings develop. It is safe to affirm that the feeling of identity of kind does not arise, until the individual instincts, which enable a creature to judge of its environment and of its relations to hostile creatures, are well developed. Its pleasures come from its environment, and its pains from its enemies. They must receive the first attention of any creature, and the instincts upon which it acts must be individual until other creatures of the same kind can be of some aid in the struggle for existence.

Professor Giddings complains because I did not answer his question as to how "an isolated individual too intensely conscious of initial utility to perceive any lesser degrees becomes aware of marginal utility and concludes to be sociable." I did not answer this question because

I did not make any statement upon which such a question could be based. In my first communication, I emphasized the fact that an unsocial being enjoys "every possible degree of utility," but "there is no comparison of the successive states of feeling, and hence their relations to one another have no influence" on his conduct. I have not, therefore, to account for the acquisition of the power to perceive lesser degrees of utility, but for the acquisition of the power of contrasting and comparing these feelings. I, therefore, restated the question so as to make it conform to the statements I had made.

Although this answer does not seem conclusive to Professor Giddings, I must in the main reaffirm it although it can be made more complete. I agree with him when he says that the mere passing from plenty to scarcity will not tend to develop the power to contrast and compare initial and marginal utilities. The poorer environment that I had in mind was not one where scarcity was a perpetual condition, but one where plenty and scarcity alternate. A period of plenty destroys the opposition between individuals and tends to develop social relations. The period of scarcity puts them again in an attitude of opposition, but the memory of the period of plenty will still be vivid enough to have some influence on conduct during periods of relative scarcity where the demand for food can be partially but not wholly satisfied. Remembering the plenty of the past, and hoping for a new period of plenty, animals will be more likely to restrain their aggressive tendencies than if their environment was always good or always poor. The power to contrast feelings that arise from different conditions goes along with the power to contrast the conditions out of which the feelings arise. The progressive being is he who lives under a variety of conditions, and must, therefore, acquire the power to contrast them and the feelings which they generate in him.

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## "SOCIAL" VS. "SOCIETARY."

As an expedient for reinforcing the "jargon" of sociology, I suggest mobilization of the word "societary" to relieve the overworked word "social." This substitution seems advisable in view of the difficulty, which I am persuaded is largely verbal, illustrated in the difference running through and complicating the current discussion in the ANNALS, between Professor Giddings and Professor Patten, as to what is and what is not a "social" science. Professor Patten appears to assume that in order to be properly called "social" a science must deal with associations supposed to be pervaded by the spirit of